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मानक

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Jawaharlal Nehru

“Step Out From the Old to the New”

IS 8107 (1993): Wood working machines - Routing machines - Nomenclature and acceptance conditions [PGD 3: Machine Tools]



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“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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IS 8107 : 1993
ISO 7948 : 1987

भारतीय मानक

काष्ठ-कार्य-उत्कीर्णन यंत्र — नामपद्धति और
स्वीकार्य अवस्थाएँ

(पहला पुनरीक्षण)

Indian Standard

WOODWORKING MACHINES — ROUTING
MACHINES — NOMENCLATURE AND
ACCEPTANCE CONDITIONS

(First Revision)

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

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Price Group 3

NATIONAL FOREWORD

This Indian Standard which is identical with ISO 7948 : 1987 'Woodworking machines—Routing machines — Nomenclature and acceptance conditions' issued by the International Organization for Standardization (ISO), was adopted by the Bureau of Indian Standards on the recommendations of the Woodworking Machine Tools Sectional Committee (PE 01) and approval of the Production Engineering Division Council.

This standard was first issued in 1976. Consequent upon the publication of ISO 7948 : 1987, this standard has been revised by adopting ISO 7948, to bring it in line with ISO standard. In this revision, clause references of ISO 230/1 : 1986 for method of tests has been incorporated which were not there earlier.

The text of the ISO standard has been approved as suitable for publication as Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- a) Comma (,) has been used as a decimal marker in the International Standard while in Indian Standards, the current practice is to use point (.) as the decimal marker.
- b) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.

In this adopted standard, reference appears to ISO 230-1 : 1986. The Indian Standard IS 2063 : 1988 Acceptance code for machine tools — Geometrical accuracy of machines operating under no-load or finishing conditions (*first revision*), which is identical with ISO 230-1 : 1986 is to be substituted in its place.

The concerned technical committee has reviewed the provisions of ISO 7984 : 1987, referred in this adopted standard and has decided that it is acceptable for use in conjunction with this standard.

Indian Standard
**WOODWORKING MACHINES — ROUTING
MACHINES — NOMENCLATURE AND
ACCEPTANCE CONDITIONS**
(First Revision)

1 Scope and field of application

This International Standard specifies the nomenclature appropriate to each part of the machine and, with reference to ISO 230-1, the geometrical tests for routing machines, and gives the corresponding permissible deviations which apply to machines of general purpose use and normal accuracy.

This International Standard deals only with the verification of the accuracy of the machine. It does not apply to the testing of the running of the machine (vibrations, abnormal noises, stick-slip motion of the components, etc.), nor to its characteristics (speeds, feeds, etc.) which should generally be checked before the accuracy is tested.

This International Standard does not impose any practical test. For routing machines, practical tests are an exception and need be performed only where there is prior agreement between the manufacturer and the user.

This International Standard applies to those machines designated by the number 12.315.12 in ISO 7984.

The annex does not form an integral part of this International Standard.

2 References

ISO 230-1, *Acceptance code for machine tools — Part 1: Geometric accuracy of machines operating under no-load or finishing conditions.*

ISO 7984, *Woodworking machines — Technical classification of woodworking machines and auxiliary machines for wood-working.*

3 Preliminary remarks

3.1 In this International Standard all dimensions and permissible deviations are expressed in millimetres.

3.2 To apply this International Standard, reference should be made to ISO 230-1, especially for installation of the machine before testing, the warming up of the main spindle and other moving parts, and the description of the measuring methods. The measuring instruments shall not permit measurement errors over 1/3 of the checked tolerances.

3.3 The sequence in which the geometrical tests are given is related to the sub-assemblies of the machine, and this in no way defines the practical order of testing. In order to make mounting of instruments and gauging easier, tests may be applied in any order.

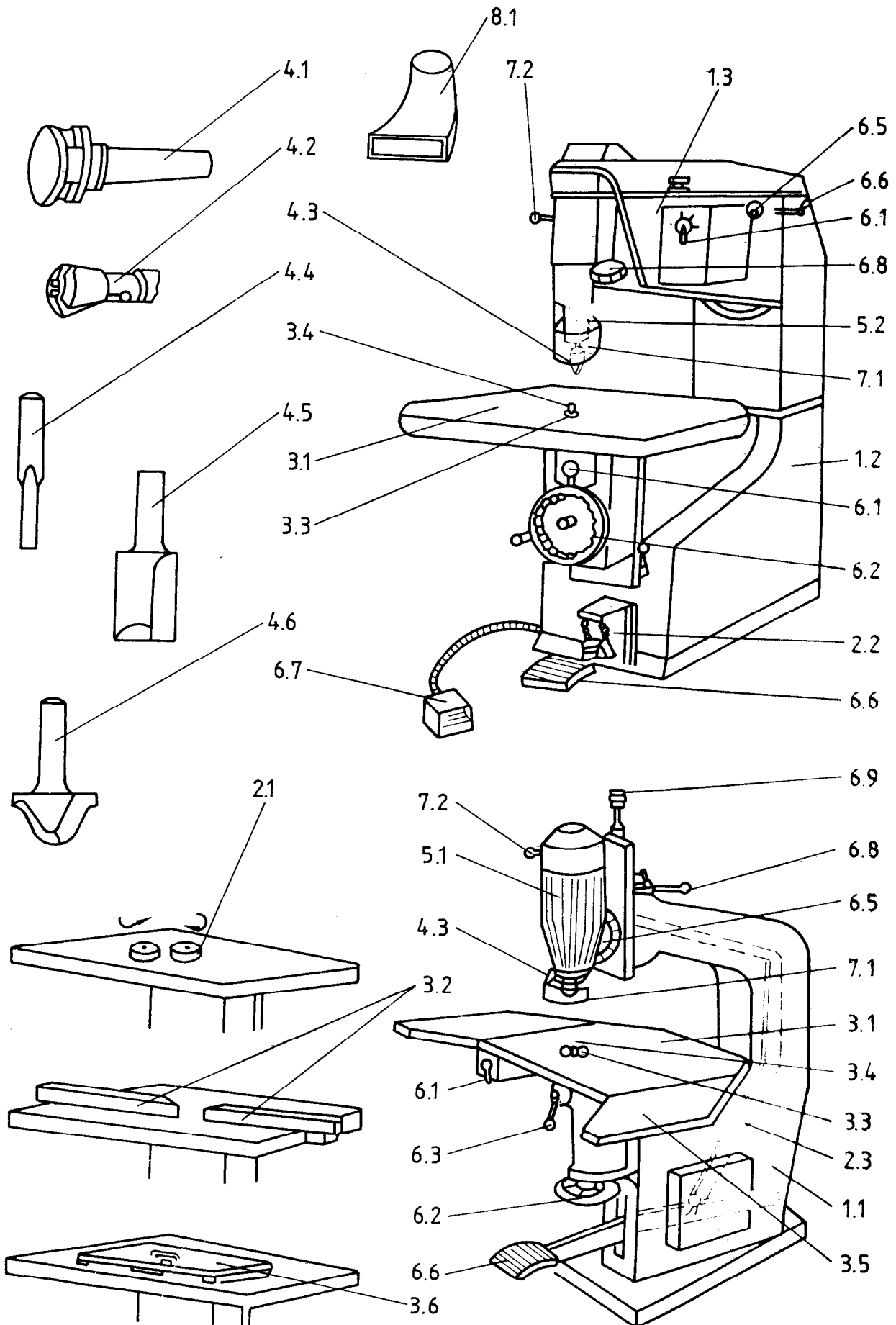
3.4 When inspecting a machine, it is not always possible or necessary to carry out all the tests given in this International Standard.

3.5 It is up to the user to choose, in agreement with the manufacturer, those tests relating to the properties which are of interest to him, but these tests shall be clearly stated when ordering a machine.

3.6 A movement is longitudinal when it takes place in the working direction of the piece.

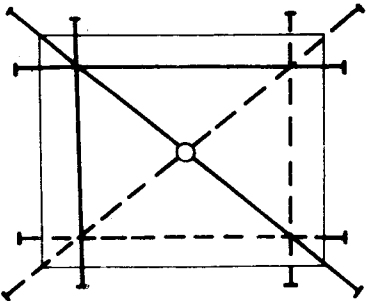
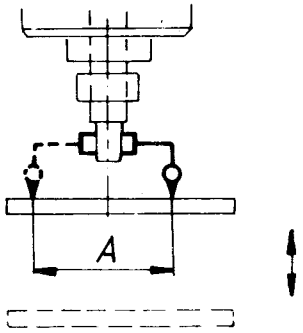
3.7 When establishing the tolerance for a measuring range different from that given in this International Standard (see subclause 2.311 in ISO 230-1), it should be taken into consideration that the minimum value of the tolerance is 0,01 mm.

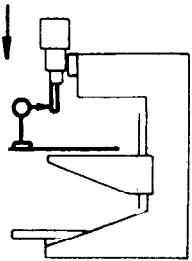
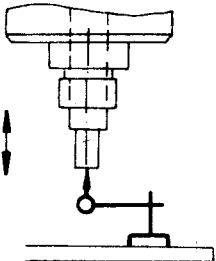
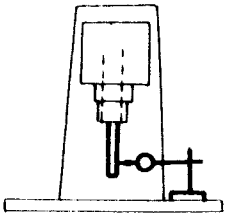
4 Nomenclature

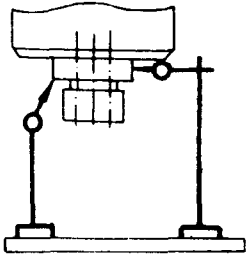
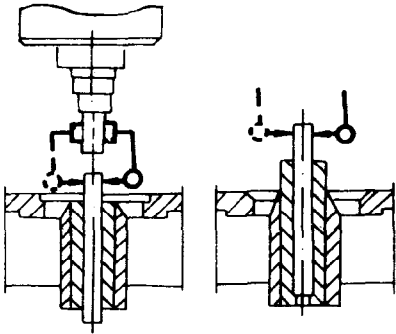


Refer- ence	English
	Routing machines
1	Framework
1.1	Body
1.2	Base
1.3	Over-arm
2	Feed of workpiece and/or tools
2.1	Automatic feed drive
2.2	Pedal ratchet
2.3	Head movement linkage
3	Workpiece support, clamp and guide
3.1	Table
3.2	Fence
3.3	Table ring
3.4	Guide pin
3.5	Table extension
3.6	Jig
4	Tool-holders and tools
4.1	Eccentric chuck
4.2	Collet
4.3	Spindle chuck
4.4	Single-edged spoon bit
4.5	Double-edged panel cutter
4.6	Solid shaped cutter
5	Workhead and tool drives
5.1	High frequency head
5.2	Belt driven spindle
6	Controls
6.1	Speed select switch
6.2	Table rise and fall adjustment
6.3	Guide pin raise lever
6.4	Belt tension knob
6.5	Head tilt lock
6.6	Head downfeed pedal (mechanical)
6.7	Head control pedal (pneumatic)
6.8	Depth stop turret
6.9	Depth stop fine adjustment
7	Safety devices (examples)
7.1	Cutter guard
7.2	Spindle brake
8	Miscellaneous
8.1	Exhaust outlet
9	(clause free)
10	Examples of work Numerous

5 Acceptance conditions and permissible deviations — Geometrical tests

No.	Diagram	Object	Permissible deviation	Measuring instruments	Observations and references to the ISO 230-1 acceptance code
G1		Checking of flatness of the table a) longitudinally b) transversely c) diagonally	a) and b) 0,1 for $L^* < 630$ 0,15 for $630 < L < 1\,250$ 0,2 for $L > 1\,250$ c) 0,15 for $L < 630$ 0,25 for $630 < L < 1\,250$ 0,3 for $L > 1\,250$	Straightedge and feeler gauges	Subclause 5.322 * L is the length of the table
G2		Checking of squareness of the spindle axis to the table surface	0,1/400*	Dial gauge	Subclause 5.512.4 Head slide at mid-position; checked with table in upper and lower positions and head slide locked. Carry out the checking in two perpendicular planes. Diameter A

No.	Diagram	Object	Permissible deviation	Measuring instruments	Observations and references to the ISO 230-1 acceptance code
G3		Checking of parallelism of the spindle movement to its axis of rotation	0,05 for a movement of the spindle of 100	Dial gauge and test mandrel	Subclause 5.422.3
G4		Measurement of axial play of the spindle, with preloaded bearings	0,02	Dial gauge	Subclause 5.622 Measured at normal operating temperature.
G5		Measurement of run-out of the spindle	0,03	Dial gauge and test mandrel	Subclause 5.612.2 Measure at 80 mm from the shoulder.

No.	Diagram	Object	Permissible deviation	Measuring instruments	Observations and references to the ISO 230-1 acceptance code
G6		Measurement of run-out and camming of the outside diameter of the spindle	0,02	Dial gauge	<p>Subclauses 5.612.2 and 5.632</p> <p>Check only if the tool is located on the outside diameter.</p>
G7		Checking of alignment of the axis of the spindle and the guide pin	0,03	Dial gauge	<p>Subclause 5.442</p> <p>Check in two positions with the guide pin retracted and fully extended.</p>

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